

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number  
WO 2004/083592 A3

(51) International Patent Classification<sup>7</sup>: E21B 17/00,  
19/16

WADDELL, Kevin, Karl [US/US]; 11007 Sprucedale  
Court, Houston, TX 77077 (US).

(21) International Application Number:  
PCT/US2004/008073

(74) Agents: KICE, Warren, B. et al.; Haynes and Boone,  
LLP, Suite 3100, 901 Main Street, Dallas, TX 75202 (US).

(22) International Filing Date: 18 March 2004 (18.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/455,718 18 March 2003 (18.03.2003) US

(71) Applicant (for all designated States except US): EVEN-  
TURE GLOBAL TECHNOLOGY [US/US]; 16200 A  
Park Row, Houston, TX 77084 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

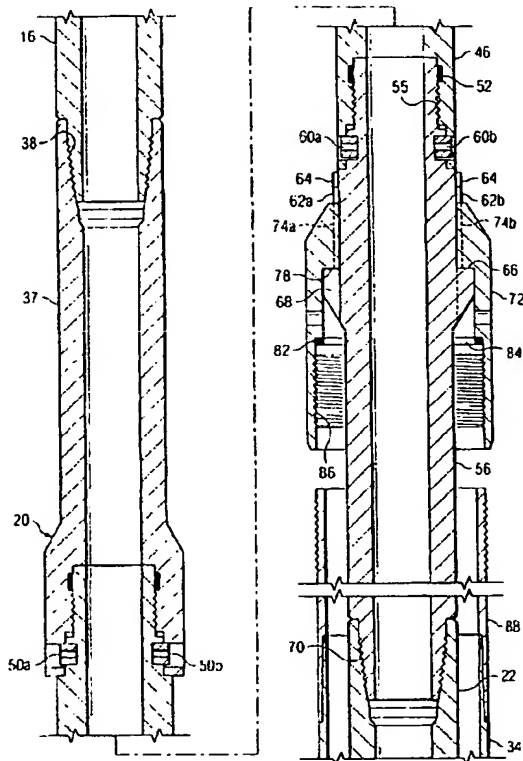
(72) Inventors; and

(75) Inventors/Applicants (for US only): BRISCO, David,  
Paul [US/US]; 405 Westridge Drive, Duncan, OK 73533  
(US). BULLOCK, Michael, Dennis [US/GB]; The  
Beeches, 25 Hillhead Road, Aberdeen, AB15 9EJ (GB).

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR RUNNING A RADially EXPANDABLE TUBULAR MEMBER



(57) Abstract: A tubular apparatus (20) and method, according to which a first tubular member (34) is adapted to be lowered into a well bore and a second tubular member (120) is connected to the first tubular member (34). A third tubular member (102, 112) is normally connected to the first tubular member (34) and disconnected from the second tubular member (102, 112), and is adapted for movement relative to the first (34) and second tubular (120, 112) members to disconnect from the first tubular member (34) and connect to the second tubular member (102, 112).

WO 2004/083592 A3



GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,

EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- of inventorship (Rule 4.17(iv)) for US only
- of inventorship (Rule 4.17(iv)) for US only

**Published:**

- with international search report

(88) Date of publication of the international search report:  
19 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/08073

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) E21B 17/00, 19/16

US CL 166/242.7, 380, 208

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)


U.S. : 166/242.7, 380, 277, 377, 378, 381, 382, 77.51, 301, 206, 242.1, 242.6, 207, 208

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P, L	US 2003/0075337 A1 (Maguire) 24 April 2003 (24.04.2003), see Figures.	21-26, 28-34
Y, P, L		27
Y	US 2002/0139540 A1 (Lauritzen) 03 October 2002 (03.10.2002), see paragraph 0038.	27
A	US 4,915,177 A (Claycomb) 10 April 1990 (10.04.1990), see Figures.	1-20
A	US 4,995,464 A (Watkins et al.) 26 February 1991 (26.02.1991), see Figures.	1-20
A	US 3,667,547 A (Ahlstone) 06 June 1972 (06.06.1972), see Figures.	1-20
A	US 5,566,772 A (Conne et al.) 22 October 1993 (22.10.1993), see Figures.	1-20
A	US 4,778,088 A (Gonzalez et al.) 18 October 1988 (18.10.1988), see Figures.	1-20
A, T	US 6,516,887 B2 (Nguyen et al.) 11 February 2003 (11.02.2003), see Figures.	1-20

<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.		<input type="checkbox"/> See patent family annex.	
Special categories of cited documents:			
-A-	document defining the general state of the art which is not considered to be of particular relevance	-T-	later document published after the international filing date or priority date and not in conflict with the application but cited in order to understand the principle or theory underlying the invention
-B-	earlier application or patent published on or after the international filing date	-X-	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
-L-	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	-Y-	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combinations being obvious to a person skilled in the art
-O-	document referring to an oral disclosure, use, exhibition or other means	-Z-	document member of the same patent family
-P-	document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 04 August 2004 (04.08.2004)		Date of mailing of the international search report 04 MAR 2005	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer David Bagnell  Telephone No. (703) 308-1113	

## INTERNATIONAL SEARCH REPORT

PCT/US04/08073

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,E	US 6,732,806 B2 (Mauldin et al.) 11 May 2004 (11.05.2004), see Figures.	21-34
A,E	US 6,695,065 B2 (Simpson et al.) 24 February 2004 (24.02.2004), see Figures.	21-34
A,P,L	US 6,543,552 B1 (Metcalf et al.) 08 April 2003 (08.04.2003), see Figures.	21-34
A,P,L	US 6,543,545 B1 (Chatterji et al.) 08 April 2003 (08.04.2003), see Figures.	21-34
A	US 6,325,148 B1 (Trahan et al.) 04 December 2001 (04.12.2001), see Figures.	21-34
A	US 5,785,120 A (Smalley et al.) 28 July 1998 (28.07.1998), see Figures.	21-34

INTERNATIONAL SEARCH REPORT

PCT/US04/08073

Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: expandable casing, expandable tubing, expandable liner, connection, thread, torque, cement, resistance, restriction, obstruction, expander, expansion cone, expansion mandrel, rotation, tension, liner hanger